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WAR FOOD ADMINISTRATION
Office of Distribution
Washington 25, D. C.

February 7, 1944

McCall's Magazine has asked us to send you a copy of the bulletin on Community Food Preservation Centers mentioned in the January issue of their magazine. When that article was prepared we were confident that the bulletin would be available for distribution by the time the article appeared. However, owing to unforeseen production difficulties, the publication of the bulletin has been delayed. A copy will be sent to you as soon as it is completed.

We know that you are anxious to obtain information on how to organize and establish a center and we want to help you in every way possible. Enclosed is a copy of that portion of the bulletin which deals with organizing the community, planning for financing, selecting a supervisor, deciding the type and size of cannery, and selecting the site and building. We are also enclosing floor plans for three typical canneries which illustrate desirable arrangements of equipment for maximum production and show the amount of space and equipment needed.

You will note that in the three plans equipment is grouped in specific areas according to the steps in preparing and processing, following the natural sequence of operations, that is, receiving produce, washing, scalding, preparing produce for the can, blanching, cold dipping, filling into the can, exhausting, sealing, processing, and cooling, with final delivery to the temporary can storage space where produce is released to the patrons.

You will also find enclosed a list of types of equipment used in community canning centers with approximate price ranges and sources of supply.

For specific information on any piece of equipment we suggest that you write to a manufacturer listed. To find out how to get priority ratings on equipment write to the regional director of the Office of Distribution, War Food Administration. A listing of these directors and the States which each serves follows:

Northeast Region

States

Francis D. Cronin
Regional Director
Office of Distribution
150 Broadway
New York 7, New York

New York	Vermont
Connecticut	Massachusetts
Delaware	New Hampshire
District of Columbia	New Jersey
Maine	Pennsylvania
Maryland	Rhode Island
	West Virginia

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Southern Region

States

Col. James H. Palmer	Alabama	Mississippi
Regional Director	Florida	North Carolina
Office of Distribution	Georgia	South Carolina
Western Union Building	Kentucky	Tennessee
Corner Marietta and Forsyth Streets		Virginia
Atlanta 3, Georgia		

Midwest Region

E. O. Pollock	Illinois	Missouri
Regional Director	Indiana	Nebraska
Office of Distribution	Iowa	North Dakota
Room 1714, 5 South Wabash Avenue	Michigan	Ohio
Chicago 3, Illinois	Minnesota	South Dakota
		Wisconsin

Southwest Region

Lester J. Cappleman	Arkansas	New Mexico
Regional Director	Colorado	Oklahoma
Office of Distribution	Kansas	Texas
425 Wilson Building	Louisiana	
Dallas 1, Texas		

Western Region

Buell F. Maben	Arizona	Oregon
Regional Director	California	Utah
Office of Distribution	Idaho	Washington
821 Market Street	Nevada	Wyoming
San Francisco 3, California	Montana	Territory of Hawaii

We are very glad to know that you are interested in the Community Canning Program. We hope that the information we have given you in this letter will enable you to begin your planning. The complete manual, which we will mail you later, will give full directions for installing and operating equipment as well as approved canning techniques.

Sincerely yours,

Marcus J. Gordon

Marcus J. Gordon, Chief
School Lunch & Food Preservation Division
Civilian Food Requirements Branch

Enclosures

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UNITED STATES DEPARTMENT OF AGRICULTURE
WAR FOOD ADMINISTRATION
Office of Distribution

February 1944

COMMUNITY FOOD PRESERVATION CENTERS
Canning Phase

Preserving food in organized community centers has become one of America's foremost programs to help solve Nation-wide feeding problems during wartime. The proved value of these centers--as well as their importance to the health of the individual family--should insure their continuance in peacetime.

Recently there has been an increasing demand for information and assistance in establishing and operating large community food preservation centers. This handbook is part answer to that demand. It deals only with the organization and operation of the canning units in such centers.

Canning has been taken up first in this informational series because in most communities the preservation center develops around a canning unit. After this has been established, units for preserving food by storing, dehydration, quick-freezing, pickling, and brining may be added as time and money permit.

Canning at the center, of course, must be done in such a way that products are safe to use, and loss through spoilage is kept at a minimum. This calls first of all for the right sort of processing equipment. A boiling water bath, which reaches a temperature of 212° F. at sea level is safe equipment for processing acid foods. Such foods include all fruits and tomatoes. For nonacid foods, which include all vegetables except tomatoes, processing must be done at higher temperatures--that can be reached only by using steam under pressure. These higher temperatures of 240° to 250° F. are necessary to insure the destruction of spore-forming organisms which are extremely resistant to heat. One of these organisms, the botulinus bacterium, produces spores or resting cells that are very difficult to kill. If they happen to be present and are not killed, they can come out of the resting stage, grow, and produce a deadly poison or toxin. The illness caused by eating even the smallest portion of food contaminated with this toxin is often fatal and is known as botulism or botulinus poisoning.

Therefore, all centers that are set up to can vegetables must have pressure equipment. This equipment may vary from pressure cookers and small retorts heated by gas burners, to medium-size retorts, such as are used in commercial canneries with steam facilities.

No matter what the size of the canning unit, however, community canning is never just "home canning on a large scale." To be successful, it must be an adaptation of commercial canning, making use of methods and techniques that have been tested and found to give the maximum production of a safe, good quality product.

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GETTING THE COMMUNITY ORGANIZED

Community food preservation centers will not just happen. They must be planned and arranged for. And all planning and arrangements need to be done well ahead of the big food preserving season. Planning soundly and getting the center operating on a business basis from the beginning are necessary if the center is to be successful over a period that justifies the expenditure of money and effort involved.

Successful food preservation centers usually are the result of group action spurred on by some individual who sees the need of preserving all food supplies and has the energy to take the issue in hand and do something about it. It doesn't matter who this is, but likely promoters will be such persons as an energetic homemaker, a home demonstration agent, a business man growing his first garden, a vocational agriculture or home economics teacher, or a civic leader..

Such a leader will round up a group of interested persons and together with them first take inventory of the community's food preservation needs and possibilities.

It is up to them to survey the situation, to determine the need, the interest, the territory to be served by the prospective center, whether all families or only a limited number in the territory might be included among patrons of the center, and what canning equipment is already on hand in the community. Many communities include school lunch and institutional needs in this initial survey.

A satisfactory method of getting much of the information needed in the survey is to pass circulars or questionnaires to families in the community. Such questionnaires might include items to determine whether or not a family is interested; the kind and amount of food it would like to put up, whether this food will be home-produced or bought, and whether or not the family has a pressure cooker. It is well to indicate on such a questionnaire the maximum amount and kind of food a family, a school, or an institution could expect to have preserved. Food budgets recommended by State departments of agriculture can serve as a guide for setting such a figure.

Where the survey reflects a real need and interest in establishing a food preservation center, the most effective way of getting the issue in the hands of community members is to have a public meeting. At this meeting a working committee will need to be elected and given the authority to get the program organized and operating. This committee will then need only to report occasionally to the persons participating.

On the personnel of this committee will depend the effectiveness of the program. Its membership should include representative citizens who can head up subcommittees to handle specific problems involved, thus building up an effective organization. Among those it would be well to include on the

committee are a business man, a trained home economist, a teacher of vocational agriculture, an engineer, a newspaper publisher, a health officer or physician, and members of civic, service, and garden clubs and of school boards and local government. The subcommittees that may need to be organized are ones to give direction and supervision on (1) financing, (2) housing and equipment, (3) public relations and arbitration, (4) operation, and (5) health and sanitation of the plant. By dividing the direction of the program in this way, it becomes the responsibility of the group rather than a burden on any individual.

Until the plant has been established and is ready to operate, the committee will be busy making such decisions as the following: (1) kinds and quantities of food to be preserved; (2) methods of preservation to be used and size and type of preserving units to be installed; (3) selection of a supervisor or manager; (4) selection of site and building; (5) development of floor plans for installation of equipment; (6) selection, purchase, and installation of equipment and supplies; (7) what sort of financing will cover the cost of the center.

With the supervisor, the committee will also determine policies of operation of the center, type of training that patrons will need, agreements with patrons, type and amount of publicity needed to inform the public, and the number of personnel required to operate the plant. As the season gets under way, the supervisor will need the assistance of the committee to solve operating problems and to make improvements or changes in the center from time to time.

PLAN FOR FINANCING

A community cannery must have initial funds for equipment and supplies, housing and utilities, necessary labor and supervision, and for protective insurance for workers. Such funds may be obtained through popular subscription or a bond issue in the community. More often, however, the local board of commissioners, welfare board, school board, farmers' cooperatives, chamber of commerce, or civic and fraternal organizations assume these initial costs. Many communities have found it advisable to incorporate the canning center on a nonprofit basis.

Other sources of support for the community cannery are contributions by civic-minded individuals or groups in cash, equipment, space, utilities, or services. Also in some States, legislators have appropriated funds to assist in establishing and operating food preservation centers. Some types of centers are eligible for Federal aid. Committees will do well to investigate all these angles. They will find helpful information on available government aid from the State Agricultural Extension Service or the State Department for Vocational Education.

To pay the overhead costs of the center, the usual method is to collect a small service charge for each can of food processed. This cost is based on the price of a can plus a small charge for services and utilities. If the plant is operated at capacity, enough money may accrue from this source to pay off indebtedness as well as cover costs of replacements and repairs.

When the community wishes to operate the center to supply food for organized groups, institutions, or school lunch programs in addition to regular community canning, a toll in canned products may be collected. The amount of toll will vary with the type and value of the product canned and the cost of operating the plant.

If the committee maintains central control of purchases and contracts for the seasonal supply of cans and fuel, a real saving in overhead costs can be realized. The purchase of containers may be done in cooperation with other communities if the quantities required do not make up a carload lot.

SELECTING A SUPERVISOR

Every canning center should have, if possible, a paid supervisor who is on the job all the time the center is in operation. In large canning centers such a supervisor is essential.

The supervisor will have the responsibility of seeing that patrons and paid and volunteer workers are well trained in methods of preparing and processing foods and in operating equipment. She will also be responsible for making appointments, scheduling produce, scheduling and supervising workers, determining and ordering supplies needed, and maintaining the necessary records for efficient operation. She will assume the responsibility for the care, replacement, and repair of equipment, both during the time the cannery is in operation and when the center is being closed.

From time to time, she may present to the committee plans for improved operation, such as rearrangement of equipment for a better flow of work or the addition of equipment required for improved or expanded operation.

Qualified supervisors are likely to be found among home demonstration agents, teachers of home economics and vocational agriculture, commercial canners, and canners trained in the former WPA program. If possible, it is well for the supervisor to have had actual experience in operating such a center. In addition to being able to direct and train others, the supervisor should possess good judgment and ability to meet emergencies. Training in first-aid methods is also a desirable qualification.

State training programs conducted by groups or agencies directing or assisting community food preservation programs should be attended by the supervisor selected. Other training experiences, such as visiting a commercial cannery, may prove helpful in planning and scheduling work and evaluating the plant in terms of improved efficiency.

Where a State agency provides the services of a State-wide supervisor and bacteriologist, communities should request their assistance when necessary.

DECIDING THE SIZE AND TYPE OF CANNERY

The size of cannery will be determined by the amount of produce that must be put up daily to can the total anticipated production during the canning season.

The canning season will vary from 60 to 120 days or more depending upon the part of the country and the kind of products to be canned.

To estimate roughly the daily capacity of the unit and consequently the amount of equipment needed, divide the total number of quarts to be produced by the approximate number of days the cannery will operate. Then add from 10 to 15 percent to allow for the peak production period when the greatest variety and amount of food can be expected. In some localities and whenever possible, a year-round plan of operation is advisable and should be encouraged.

When deciding on the type of center to establish in the community, think of a number of factors.

First of all -- consider the amount of canning to be done. The small center using pressure cookers and small retorts heated by gas is satisfactory for a daily production up to 800 quarts and not to exceed 1,000 quarts of produce. The steam-operated plant using small and medium-size retorts should be established when the daily production required is greater than 1,000 quarts. Where the daily output will need to exceed 6,000 quarts, it probably will be well to establish more than one plant as the management problems and space requirements for the preparation of the produce become too difficult to handle under limited supervision usually supplied in a community cannery.

Another thing to consider is the population of the community. Pressure cooker units are recommended in areas where the population is more or less transient. Also in rural and urban areas where the families are widely scattered, it may be better to have several small centers at convenient locations in preference to a large steam plant. Steam-operated plants should be established only when an adequate food supply can be assured and preferably where families are home owners and the services are tied up with the needs of a school lunch program or some local institution. Steam-operated plants established near farmers' markets provide an excellent outlet for caring for produce that might otherwise be wasted. Steam-operated plants are usually planned for year-round operation over a period of several years. (See floor plans for small and large canning centers included herein.)

SETTING UP THE PLANT

Selecting the Site and Building

The site for a community cannery should be considered first of all in the light of a central location for the areas served, bearing in mind the accessibility for trucks and vehicles bringing produce to the plant, amount of traffic, available parking areas, and existing regulations concerning the establishment of such a plant in that area. If the size of the plant indicates the possibility of large production, its location near railroad shipping facilities should be considered. Other factors governing selection of site would be the water supply and existing utilities.

Running water is a minimum requirement because of the large amount needed for safe and efficient operation. Water is required for washing, making sirup and brine, processing by water bath, cooling cans, operating the boiler, washing the equipment, floors, etc., and to keep the plant sanitary. The water supply should be adequate to deliver at least 2 gallons of water for every quart of produce processed daily. The water supply used must be safe and should be tested for purity.

Electric service should be heavy enough to support the load required and should be of the voltage necessary to operate the motor-driven equipment.

Gas service for gas-operated units should be adequate for operating all units in the plant at the same time.

A telephone should be provided to facilitate scheduling. In large plants an extension may be necessary.

The building most practical for canning uses should be a ground floor location. In a 2-story building the second story may well provide sufficient space for empty can storage. Small pressure cooker units may be located in church basements or similar places that provide needed space and utilities. However, when considering location of a steam unit, it is necessary to get a separate building.

When selecting a building, consider first commercial canning plants where equipment has already been installed. Also, abandoned bottling works, bakeries, laundries, garages, creameries, and such buildings where steam facilities may have already been installed, may be good buildings to choose. Buildings adjacent to steam facilities may be used also. Check such facilities to be sure they are of ample capacity to supply both plants.

Size of the building should be determined by the amount of produce to be preserved, the type of equipment to be used, and the number of patrons that probably will be working at one time. A rectangular building is desirable because its floor space can be used to advantage in arranging equipment.

However, any space having the required number of square feet could be used. Floor space required for the preparation and processing area and for boiler rooms for different capacity plants can be determined from the floor plans shown in this publication.

In larger units, separate office space may be desirable. In addition, there need to be dressing rooms and toilet and lavatory facilities properly segregated from the canning area. Container storage space and warehousing needed will vary with the size of the plant.

All space and platforms, loading docks and stairways, if the building is so equipped, should be in good repair. Stairways should have hand rails.

The building should be well lighted and properly ventilated. The windows should be such that artificial lighting will not be necessary during the daylight hours. However, artificial lighting will be required at times and should be planned for and so arranged that each operation is well lighted. Lights should be suspended above head level and so shaded as to prevent glare on the workers' eyes.

Windows arranged to take advantage of the prevailing winds will provide good cross ventilation. In one-story buildings the ventilation and lighting may be improved by the use of roof ventilators and skylights. It may be necessary to supplement natural ventilation with exhaust and circulating fans.

Consider also facilities for heating the building during the winter season, should the plant be in use at that time. Be sure the ceiling is high enough to assure a comfortable room temperature. A minimum ceiling height of 10 feet is required to allow for clearances necessary where a track and hoist is used over retorts. The floor load capacity of the building should be determined and not in any case exceeded. Preferably the floor should be of smooth-finished concrete, free from cracks and crevices, and well-drained at or near the points of operation where quantities of water are used. In the construction of a new building for a cannery the drain location should be predetermined in relationship to the installation of the equipment. For proper floor drainage the pitch from the wall to the drain should be $3/4$ to 1 inch for every 10 lineal feet. Where old floors are not equipped with suitable floor drains, improvised drains may be made in the form of box gutters installed in the floor. In floor areas where it is not possible to install drains slatted platforms should be used to keep feet dry.

It should be determined whether there is an existing sewage disposal, and where one is not available a septic tank should be installed.

The walls should be in good repair and have a surface, preferably painted, that can be easily kept clean.

The building should have a minimum of two doors, preferably both opening outward. One, to be used for receiving produce, should be located in direct relationship to the receiving area in the plant; the second door, for checking out canned goods, should be used by patrons. All openings of the building should be well screened.

Approximate Price Range and Source of

Major Items of Equipment Used in Community Canning Centers 1/
(In furnishing this partial list in an effort to aid you, it should be understood that no discrimination is intended and no guarantee of reliability is implied.)

Item.	Description	Approximate Price Range	Partial List of Suppliers
Boilers	Upright or Horizontal 12-20 H.P.	\$300 - \$500	Orr & Sembower Inc., Reading, Pa. Milwaukee Boiler Mfg. Co., Milwaukee, Wis. Birchfield Boiler Co., Tacoma, Washington Lookout Boiler Mfg. Co., Chattanooga, Tenn.
Retorts - with inset crates	33 No. 3 can capacity	\$30 - \$35	Athens Boiler Wks., Athens, Ga. Martin Machinery Co., Pine Bluff, Ark. Continental Can Co., Athens, Ga. J. P. Dowell Co., McKinney, Tex.
	80 - 90 No. 3 can capacity	\$50 - \$80	A. K. Robbins Co., Baltimore, Md. Food Machinery Corp., Hoopeston, Ill.
	100 - 120 No. 3 can capacity	\$60 - \$80	Continental Can Co., Athens, Ga. J. P. Dowell Co., McKinney, Tex.
Retort Stands (Burners)	For heating retorts with gas or gasoline	\$10 - \$20	J. P. Dowell Co., McKinney, Tex. Wisconsin Aluminum Foundry Co., Manitowoc, Wis.
Pressure Cooker, and Stock Pot	18 No. 3 can capacity	\$50	Eclipse Fuel Engineering Co., Rockford, Ill.
			Legion Utensils Corp., Long Island City, N. Y.
Pressure Cammers	7 - 14 qt. capacity	\$15 - \$22	Burpee Can Sealer Co., Barrington, Ill. National Pressure Cooker Co., Eau Claire, Wis.
			The Pressure Cooker Co., Denver, Colo. Wisconsin Aluminum Foundry Co., Manitowoc, Wis.

Can Sealers	Light duty, hand-operated	\$12 - \$18	Burpee Can Sealer Co., Barrington, Ill. Continental Can Co., Athens, Ga. National Pressure Cooker Co., Eau Claire, Wis. Wisconsin Aluminum Foundry Co., Manitowoc, Wis.
	Heavy Duty, hand-operated	\$35.00	Max Ams Machine Co., Bridgeport, Conn.
	Belt or motor-driven	\$60 - \$100	Continental Can Co., Athens, Ga. Max Ams Machine Co., Bridgeport, Conn.
Steam Jacketed Kettles	40 - 60 gallon capacity	\$125 - \$275	Bucyrus Kettle Works, Bucyrus, Ohio Lee Metal Products Co., Philippsburg, Pa. Mangrum, Holbrook, & Elkus, San Francisco, Cal.
Large Scale Canning Equipment and general line of canners, equipment and accessories			
Exhaust Boxes	3' x 5' batch type 3' x 4' batch type		A. K. Robbins Co., Baltimore, Md. Chisholm Ryder Co., Niagara Falls, N. Y. Food Machinery Corp., Hoopeston, Ill. F. H. Langsenkamp Co., Indianapolis, Ind.
Wash Tanks	2' x 2' x 10' (partitioned) 2' x 2' x 4' 2' x 2' x 30" (or double compartment sink)		
Scalding Tanks	2' x 2' x 4' 26" diameter x 36" deep		
Blanch Tanks	2' x 2' x 4' 26" diameter x 36" deep		
Cold Dip Tanks	2' x 2' x 4' 26" diameter x 36" deep		

All of the following items may be constructed in sheet metal shops. Many of the tanks can be made from old oil drums, watering tanks or other similar types of containers. One of each of these items should be provided for every community canning center; the size to depend on the output of the center.

Can Washing Tanks

2' x 1' x 4'
2' x 1' x 3'

Medium Tanks

For brine, sirup, etc.
15-20 gallon capacity
20-50 gallon capacity
50-100 gallon capacity

Cooling Tanks

30" diameter; 36" high; 120" long
30" diameter; 36" high; 90" long
30" diameter; 36" high; 36" long

Preparation table

3' x 10' x 34" high

The size recommended for preparation tables is suitable for any size canning unit, the number needed, depending upon the patrons participating at any one time. A working space of 30" should be allowed for each patron.

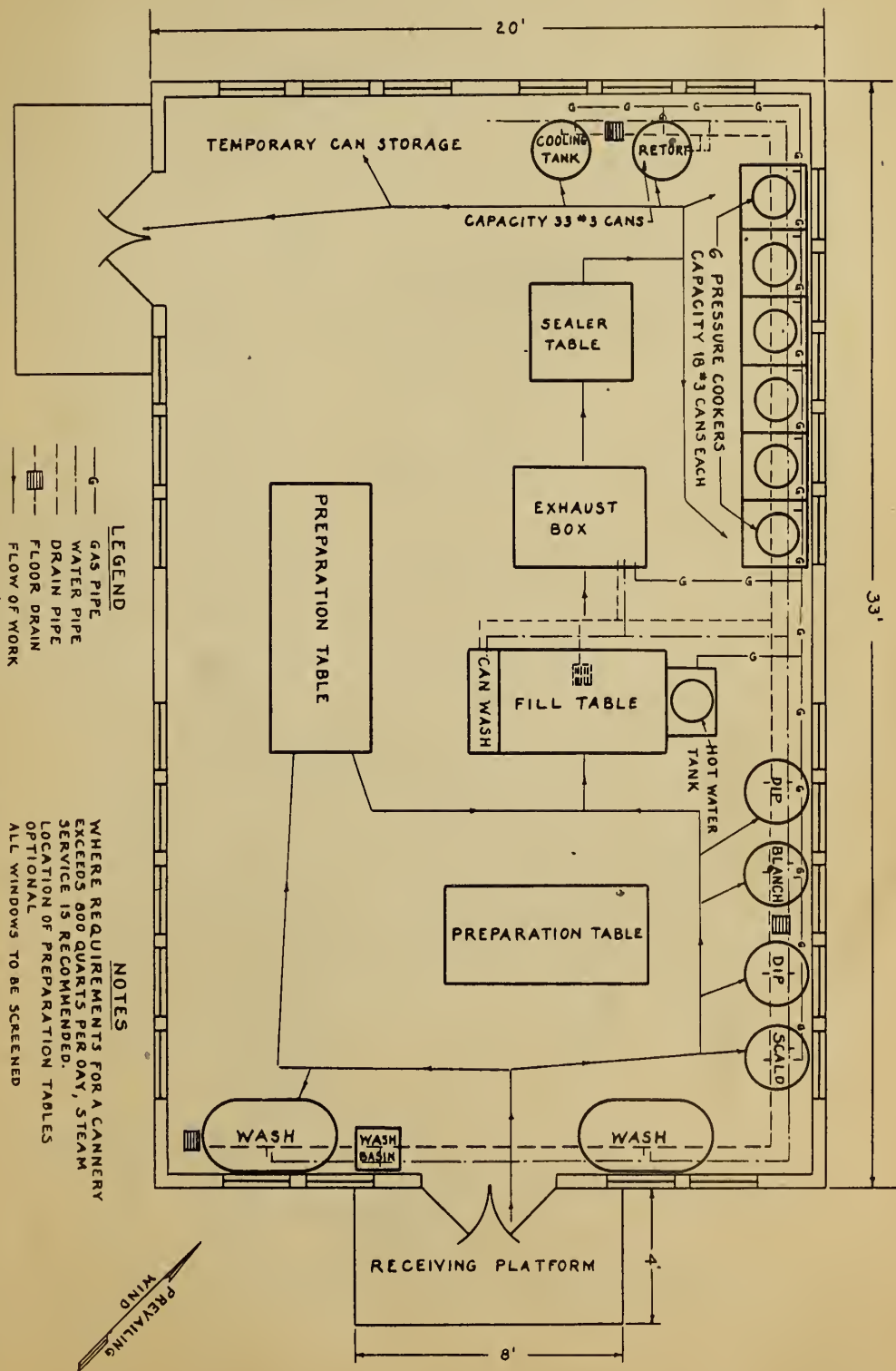
Fill Table

3' x 10' x 34" high
3' x 8' x 34" high
3' x 6' x 34" high

The size for the fill table varies with the size of canning plant. Preparation and fill tables are usually constructed locally.

1/Note - The number and sizes of pieces of equipment needed will vary according to the daily output of the center. Consult your State or local food preservation specialists and equipment manufacturers as to the equipment needed for your plant. Other items, not listed above, that are usually needed include chain hoist and track for lifting retort inset crates, blanching baskets, galvanized buckets, garbage cans, dollies, etc. Such items may be purchased locally or can be secured from general suppliers of canning equipment listed above.

PLAN OF COMMUNITY CANNING PLANT USING GAS SERVICE DAILY CAPACITY 500 TO 800 QUARTS



LEGEND

- G GAS PIPE
- W WATER PIPE
- D DRAIN PIPE
- F FLOOR DRAIN
- FLOW OF WORK

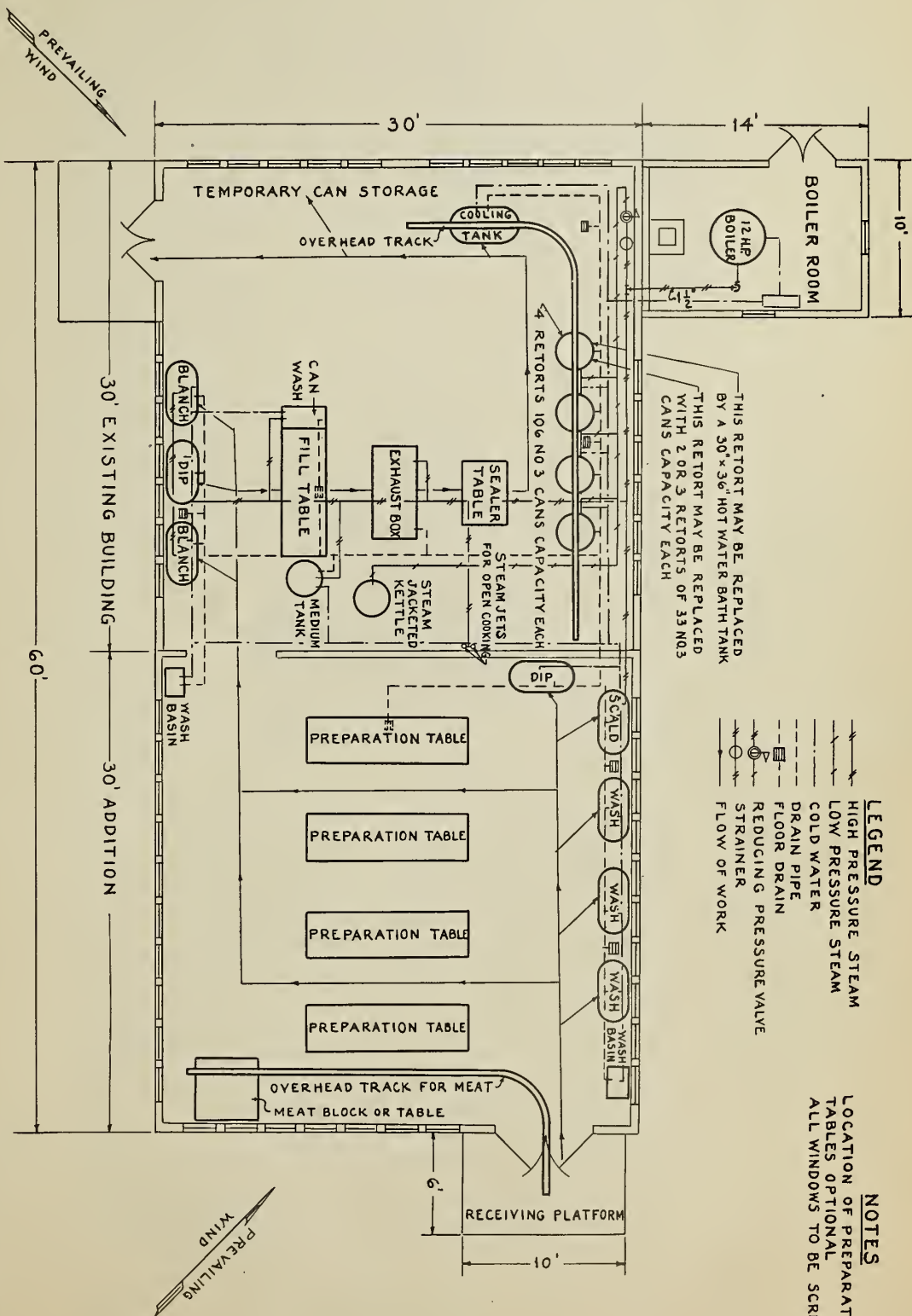
NOTES

WHERE REQUIREMENTS FOR A CANNERY EXCEEDS 600 QUARTS PER DAY, STEAM SERVICE IS RECOMMENDED.

LOCATION OF PREPARATION TABLES OPTIONAL

ALL WINDOWS TO BE SCREENED

WAR FOOD ADMINISTRATION	
FOOD DISTRIBUTION ADMINISTRATION	
CIVILIAN FOOD REQUIREMENTS BRANCH	
CANNING PLANT EQUIPMENT LAYOUT	
DRAWN BY	HTB:AO
APPROVED BY	---
DATE	DECEMBER 1943
DRAWING NO. 101	



- LEGEND**
- HIGH PRESSURE STEAM
 - LOW PRESSURE STEAM
 - - - COLD WATER
 - - - DRAIN PIPE
 - - - FLOOR DRAIN
 - - - REDUCING PRESSURE VALVE
 - - - STRAINER
 - FLOW OF WORK

NOTES

LOCATION OF PREPARATION
TABLES OPTIONAL
ALL WINDOWS TO BE SCREENED

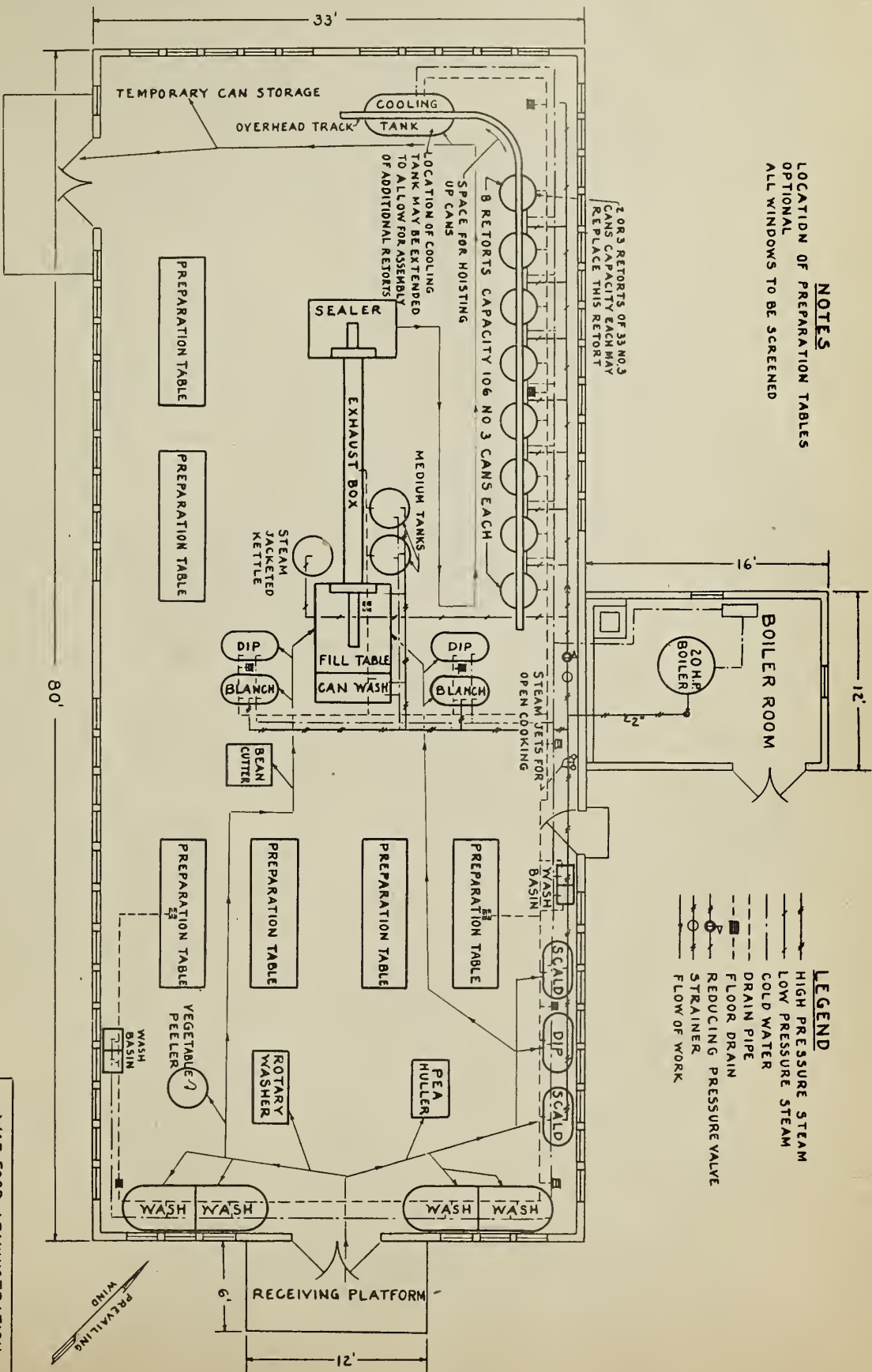
THIS RETORT MAY BE REPLACED
BY A 30" x 36" HOT WATER BATH TANK
THIS RETORT MAY BE REPLACED
WITH 2 OR 3 RETORTS OF 33 NO3
CANS CAPACITY EACH

PLAN OF COMMUNITY CANNING PLANT ADDITION TO EXISTING BUILDING DAILY CAPACITY 2000 TO 3000 QUARTS

WAR FOOD ADMINISTRATION	
FOOD DISTRIBUTION ADMINISTRATION	
CIVILIAN FOOD REQUIREMENTS BRANCH	
CANNING PLANT EQUIPMENT LAYOUT	
DRAWN BY	A.S.D.
APPROVED BY	---
DECEMBER 1943	DRAWING NO. 104

NOTES
 LOCATION OF PREPARATION TABLES
 OPTIONAL
 ALL WINDOWS TO BE SCREENED

LEGEND
 HIGH PRESSURE STEAM
 LOW PRESSURE STEAM
 COLD WATER
 DRAIN PIPE
 FLOOR DRAIN
 REDUCING PRESSURE VALVE
 STRAINER
 FLOW OF WORK



PLAN OF COMMUNITY CANNING PLANT DAILY CAPACITY 5000 TO 6000 QUARTS

WAR FOOD ADMINISTRATION
 FOOD DISTRIBUTION ADMINISTRATION
 CIVILIAN FOOD REQUIREMENTS BRANCH
 CANNING PLANT EQUIPMENT LAYOUT
 DRAWN BY *ADD*
 C.E.T. APPROVED BY
 DECEMBER 1943 DRAWING NO. 106

